

Abstract of the Disclosure

An apparatus for continuous phase quadrature amplitude modulation and demodulation to continuously process phases and amplitudes at symbol change points in an M-ary quadrature amplitude modulation method. The apparatus includes a continuous phase quadrature modulator having a first multiplier multiplying an I-channel by a cosine wave weighted function, a second multiplier multiplying an output signal of the first multiplier by a cosine wave of a carrier frequency, a delay delaying a Q-channel by a predetermined time, a third multiplier multiplying the Q-channel by a sine wave weighted function, a fourth multiplier multiplying an output signal of the third multiplier by the sine wave of the carrier frequency, and an adder adding an output signal of the second multiplier and an output signal of the fourth multiplier; and a continuous phase quadrature demodulator having a fifth multiplier multiplying the I-channel by the cosine wave of the carrier frequency, a sixth multiplier multiplying a signal from the fifth multiplier by the cosine wave weighted function, a first integrator and sampler integrating a signal from the sixth multiplier for the symbol duration time, a seventh multiplier multiplying the Q-channel by the sine wave of the carrier frequency, an eighth multiplier multiplying a signal from the seventh multiplier by the sine wave weighted function, and a second integrator and sampler integrating a signal from the eighth multiplier by the symbol duration time.